

WHAT IS CLAIMED IS:

- 1 1. A concrete mixing truck for transporting concrete from one
2 location to another comprising:
3 a chassis including: a frame; wheels coupled to the frame, a
4 first power source coupled to the frame, and a first drivetrain coupling the
5 first power source and the wheels;
6 a second drivetrain coupled to a second power source; and
7 a mixing drum coupled to the frame and to the second
8 drivetrain, the drum comprising:
9 a wall including a first section and a second section,
10 each of the first section and the second section having an inner
11 surface and an outer surface;
12 a first formation coupled to the first section and
13 extending from the inner surface of the first section proximate a
14 first side of the seam.
- 1 2. The concrete mixing truck of claim 1, wherein the first
2 formation and the first section are integrally-formed as part of a single
3 unitary body.
- 1 3. The concrete mixing truck of claim 1, wherein the first
2 formation includes a first surface and a second surface.
- 1 4. The concrete mixing truck of claim 3, wherein the first
2 surface of the first formation angles away from the inner surface of the
3 first section as it extends toward the seam.
- 1 5. The concrete mixing truck of claim 4, wherein the second
2 surface of the first formation extends from the inner surface of the first
3 section and intersects the first surface.

1 6. The concrete mixing truck of claim 5, wherein the second
2 surface of the first formation angles away from the inner surface of the
3 first section as it extends away from the seam.

1 7. The concrete mixing truck of claim 6, wherein the second
2 section includes a second formation extending from the inner surface of
3 the second section proximate a second side of the seam.

1 8. The concrete mixing truck of claim 7, wherein the second
2 formation includes a first surface and a second surface.

1 9. The concrete mixing truck of claim 8, wherein the first
2 surface of the second formation angles away from the inner surface of
3 the second section as it extends toward the seam.

1 10. The concrete mixing truck of claim 9, wherein the second
2 surface of the second formation extends from the inner surface of the
3 second section and intersects the first surface of the second formation.

1 11. The concrete mixing truck of claim 10, wherein the second
2 surface of the second formation angles away from the inner surface of
3 the second section as it extends away from the seam.

4 12. The concrete mixing truck of claim 11, wherein a channel is
5 formed between the second surface of the first formation and the second
6 surface of the second formation.

1 13. The concrete mixing truck of claim 12, wherein the second
2 surface of the first formation intersects the first side of the seam.

1 14. The concrete mixing truck of claim 13, wherein the second
2 surface of the second formation intersects the second side of the seam.

1 15. The concrete mixing truck of claim 12, wherein the channel
2 is filled with a filler material.

1 16. The concrete mixing truck of claim 15, wherein the filler
2 material is a polyurethane compound.

1 17. The concrete mixing truck of claim 1, wherein the first
2 formation is configured to direct concrete within the drum away from the
3 seam.

1 18. The concrete mixing truck of claim 1, wherein the first
2 section is an elastomeric material.

1 19. The concrete mixing truck of claim 18, wherein the wall
2 further comprises an outer layer spanning the seam between the first
3 section and the second section.

1 20. The concrete mixing truck of claim 19, wherein the outer
2 layer is a fiber reinforced composite material.

1 21. The concrete mixing truck of claim 1, wherein the first
2 formation extends from the inner surface of the first section by
3 approximately 6 mm.

4 22. The concrete mixing truck of claim 1, including a wheel end
5 reduction unit within at least one of the wheels and coupled to the first
6 drive train.

7 23. The concrete mixing truck of claim 1, including a first
8 projection extending from the inner surface of the first section and
9 configured to move concrete within the drum upon rotation of the drum.

10 24. The concrete mixing drum of claim 23 including a second
11 projection extending from the inner surface of the second section and
12 configured to move concrete within the drum upon rotation of the drum.

1 25. A heavy duty rotary concrete mixing drum for coupling to a
2 vehicle having a drivetrain for rotating the drum, the drum comprising:
3 a wall including a first section and a second section
4 separated from the first section by a seam, each of the first section and
5 the second section having an inner surface and an outer surface; and
6 a first formation coupled to the first section and extending
7 from the inner surface of the first section proximate a first side of the
8 seam.

1 26. The mixing drum of claim 25, wherein the first formation and
2 the first section are integrally-formed as part of a single unitary body.

1 27. The mixing drum of claim 25, wherein the first formation
2 includes a first surface and a second surface.

1 28. The mixing drum truck of claim 27, wherein the first surface
2 of the first formation angles away from the inner surface of the first
3 section as it extends toward the seam.

1 29. The mixing drum truck of claim 28, wherein the second
2 surface of the first formation extends from the inner surface of the first
3 section and intersects the first surface.

1 30. The mixing drum of claim 29, wherein the second surface of
2 the first formation angles away from the inner surface of the first section
3 as it extends away from the seam.

1 31. The mixing drum of claim 30, wherein the second section
2 includes a second formation extending from the inner surface of the
3 second section proximate a second side of the seam.

1 32. The mixing drum of claim 31, wherein the second formation
2 includes a first surface and a second surface.

1 33. The mixing drum of claim 32, wherein the first surface of the
2 second formation angles away from the inner surface of the second
3 section as it extends toward the seam.

1 34. The mixing drum of claim 33, wherein the second surface of
2 the second formation extends from the inner surface of the second
3 section and intersects the first surface of the second formation.

1 35. The mixing drum of claim 34, wherein the second surface of
2 the second formation angles away from the inner surface of the second
3 section as it extends away from the seam.

4 36. The mixing drum of claim 35, wherein a channel is formed
5 between the second surface of the first formation and the second surface
6 of the second formation.

1 37. The mixing drum of claim 36, wherein the second surface of
2 the first formation intersects the first side of the seam.

1 38. The mixing drum of claim 37, wherein the second surface of
2 the second formation intersects the second side of the seam.

1 39. The mixing drum of claim 36, wherein the channel is filled
2 with a filler material.

1 40. The mixing drum of claim 39, wherein the filler material is a
2 polyurethane compound.

1 41. The mixing drum of claim 25, wherein the first formation is
2 configured to direct concrete within the drum away from the seam.

1 42. The mixing drum of claim 25, wherein the first section is an
2 elastomeric material.

1 43. The mixing drum of claim 42, wherein the wall further
2 comprises an outer layer around the first section and the second section.

1 44. The mixing drum of claim 43, wherein the outer layer is a
2 fiber reinforced composite material.

1 45. The mixing drum of claim 25, wherein the first formation
2 extends from the inner surface of the first section approximately 6 mm.

1 46. The mixing drum of claim 25, including a first projection
2 extending from the inner surface of the first section and configured to
3 move concrete within the drum upon rotation of the drum.

4 47. The mixing drum of claim 46 including a second projection
5 extending from the inner surface of the second section and configured to
6 move concrete within the drum upon rotation of the drum.

1 48. A heavy duty rotary concrete mixing drum for coupling to a
2 vehicle having a powered drivetrain for rotating the drum, the drum
3 comprising:
4 a wall including a first section and a second section, each of
5 the first section and the second section having an inner surface and an
6 outer surface;

7 a seam between the first section and the second section;
8 and
9 a first means for directing concrete within the drum away
10 from the seam.

1 49. The mixing drum of claim 48, wherein the first directing
2 means is coupled to the first section of the wall.

1 50. The mixing drum of claim 49, including a second means for
2 directing concrete within the drum away from the seam, the second
3 directing means being coupled to the second section of the wall.

1 51. The mixing drum of claim 50, further comprising a means for
2 coupling the first directing means to the second directing means.

1 52. A mixing drum comprising:
2 a first section extending in an archimedial spiral along an
3 axial centerline of the drum; and
4 a second section extending in an archimedial spiral along the
5 axial centerline of the drum, wherein the first section and the second
6 section extend adjacent to one another.

1 53. The drum of claim 52, wherein the first section includes at
2 least one projection configured to move concrete upon rotation of the
3 drum.

1 54. A mixing drum having a central axis and a major diameter,
2 the drum comprising a wall having a first layer and a second layer, the
3 second layer including a plurality of elongated fibers oriented at 10.5
4 degrees with respect to the longitudinal axis at the major diameter.

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